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APR 16 1970

CURRENT-SERIAL RECORDS

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE---SOIL CONSERVATION SERVICE.

and

DEPARTMENT of WATER RESOURCES STATE of WASHINGTON

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Forest Service, U.S. Geological Survey, National Park Service, and other Federal, State and Private organizations.

AS OF
APR. 1, 1970

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES.

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P O Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D. C.

|||||
Released by

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STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

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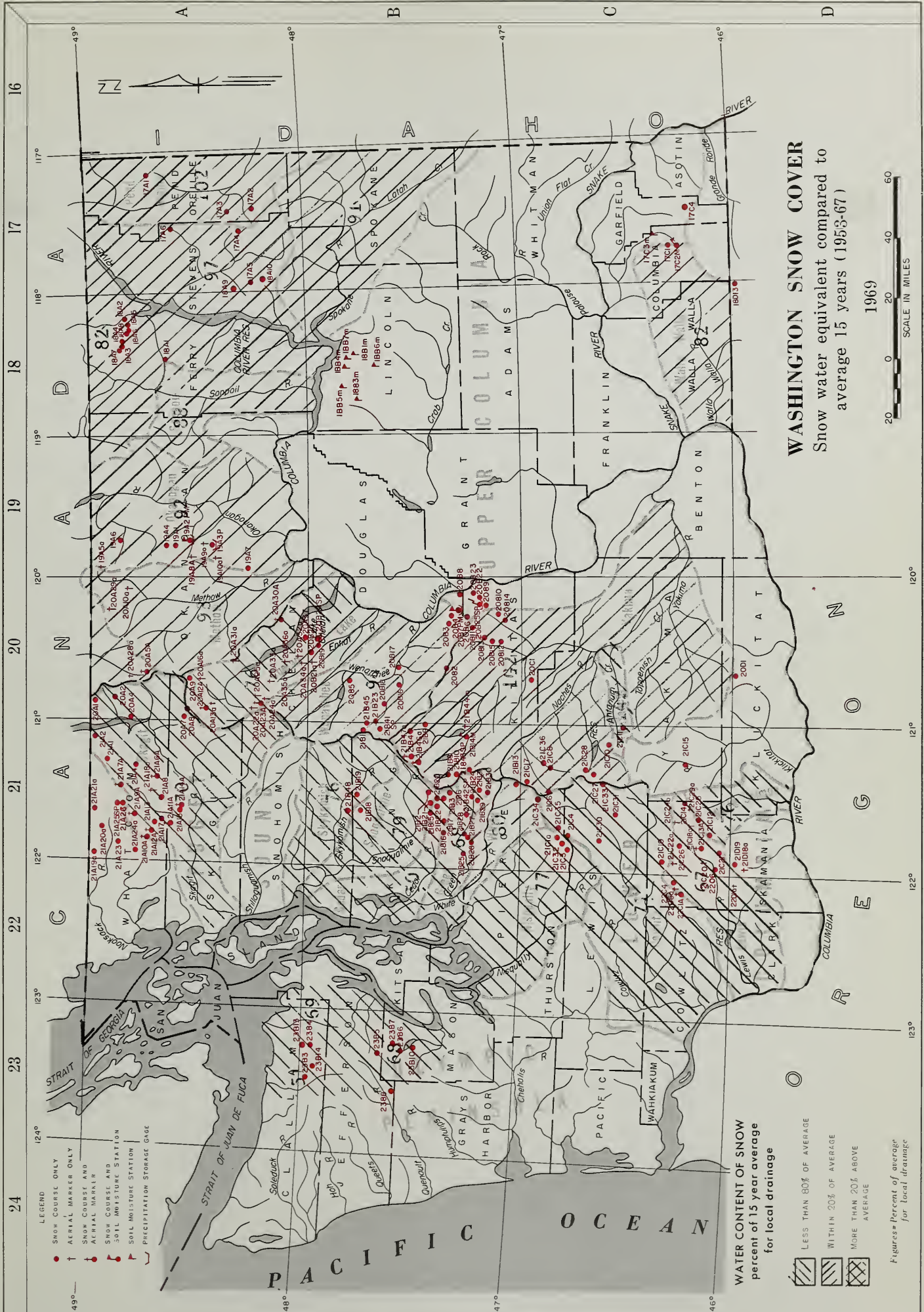
DIRECTOR
DEPARTMENT OF WATER RESOURCES
STATE OF WASHINGTON
|||||

Report prepared by

ROBERT T. DAVIS, Snow Survey Supervisor

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201



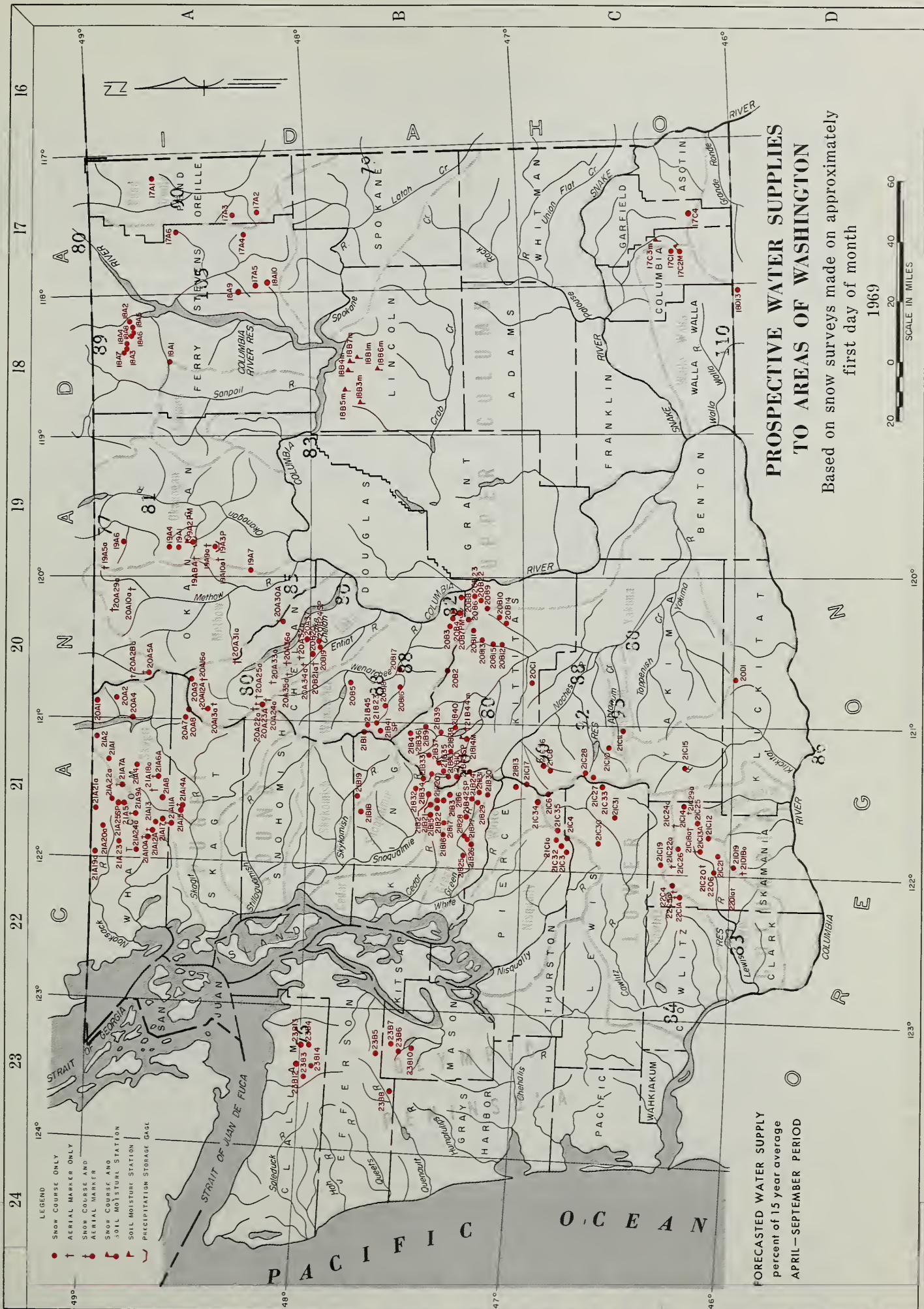


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NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.																																																																																																						
Pend Oreille River																																	Asotin Creek																																	Lewis River (continued)																																	Skagit River																																
Boyer Mountain	17A2	7	31N	43E	5250	Clockum Creek	20B22	11	20N	20E	5300	Divide Meadow	21C20a	21	9N	10E	5600	Beaver Creek Trail	21A4	35	39N	12E	2200																																																																																																												
Bunchgrass Meadow	17A1	24	37N	44E	5000	Clockum Creek No. 2	20B23	1	20N	20E	4300	Grand Meadow	21C25	28	8N	9E	3500	Beaver Pass	21A1	9	39N	12E	3680																																																																																																												
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Kettle River																																	Stemilt Creek																																	Marble Mountain																																	Freezout Creek Trail																																
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Summit G. S.	18A7	20	39N	35E	4600	Jack Woods	18B3m	28	27N	31E	2750	Stemilt Creek	20B5	34	21N	20E	4450	Beaver Creek Trail	21A4	35	39N	12E	2200																																																																																																												
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Clark	19A8a	2	36N	23E	7000	West Fork Cabin	21C15	23	9N	12E	3000	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Deer Park	23B4	1	28N	5W	5200																																																																																																						
Nuckameck	19A9a	20	36N	24E	6750	Cultus Creek	21C12	35	7N	8E	4000	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Cox Valley	23B14	29	28N	6W	4850																																																																																																						
Nutton Creek No. 1	19A1	30	37N	24E	5700	Lewis River	21C22a	19	9N	8E	4800	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Deer Park G. S.	23B13	1	28N	5W	4850																																																																																																						
Nutton Creek No. 2	19A1	19	37N	24E	6000	Blue Lake	21C22a	19	9N	8E	4800	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Hurricane	23B3	36	29N	7W	4500																																																																																																						
Payasden	20A28a	32	40N	18E	4300	Bob's Trail	21C21	25	8N	7E	2200	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Black and White	23B7	17	24N	5W	4200																																																																																																						
Rusty Creek	19A3P	18	35N	24E	4500	Calamity Ridge	22D1a	8	5N	5E	2500	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Black and White Lakes	23B6	16	24N	5W	4700																																																																																																						
Salmon Meadows	19A2PM	33	37N	24E	4500	Council Pass	21C18a	24	9N	9E	4200	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Four Stream	23B10	1	23N	6W	3900																																																																																																						
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Touts Coulee	19A6	30	39N	25E	2845	Berne-Mill Creek	21B23	7	26N	15E	2925	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Sundown Pass	23B8	25	24N	7W	3900																																																																																																						
Methow River																																	Berne-Mill Creek (New)	21B4LSP	13	26N	14E	3240	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																					
Billy Goat Pass	20A10a	10	38N	20E	6400	Blewett Pass No. 2	20B2	35	22N	17E	4270	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																																
Dollar Watch	20A29a	8	39N	20E	7000	Chiwaukun G. S.	20B16	4	25N	17E	1810	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																																
Harka Pass	20A5A	7	37N	18E	6500	Lake Wenatchee	20B5	33	27N	17E	1970	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																																
Horseshoe Basin	19A5a	15	40N	23E	7000	Leavenworth R. S.	20B17	1	24N	17E	1127	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																																
Loup Loup	19A7	36	34N	23E	4650	Merritt	20B18	4	26N	16E	2140	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																																
Chelan Lake Basin																																	Stevens Pass	21B15	14	26N	13E	4070	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																															
Cloudy Pass	20A22a	12	31N	15E	6500	Stevens Pass Sand Shed	20B25SP	10	20N	20E	5310	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Greenwood Flat	20A25a	3	31N	16E	3540	Thunder #2	20B26	12	20N	20E	5310	Crab Creek	20B8	34	21N	20E	4450	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Little Meadows	20A24a	8	31N	16E	5275	LEGEND																																	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																															
Lyman Lake	20A23a	18	31N	16E	5900	21A7 SNOW COURSE ONLY						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Park Creek Flat	20A13a	18	34N	16E	2220	21A7A AERIAL MARKER ONLY						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Park Creek Ridge	20A12a	7	34N	16E	4600	21A7M SNOW COURSE AND AERIAL MARKER						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Petersons	20A16a	3	34N	17E	3730	21A7N SNOW COURSE AND SOIL MOISTURE STATION						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Petersons	20A16a	3	34N	17E	3730	21A7P SOIL MOISTURE STATION						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Rainy Pass	20A19	21	35N	17E	4780	21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Safety Harbor	20A30a	32	31N	20E	6300	21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
War Creek Pass	20A31a	34	33N	18E	6500	21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Entiat River																																	21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE										Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																											
Brief	20B19	34	28N	19E	1600	21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200																																																																																										
Entiat Meadows	20A33a	28	31N	17E	4800	21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE						Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N	14E	4200	Thunder Basin	20A7	15	35N																																																																																																								

LEGEND

- 21A7 SNOW COURSE ONLY
- 21A7A AERIAL MARKER ONLY
- 21A7A SNOW COURSE AND AERIAL MARKER
- 21A7M SNOW COURSE AND SOIL MOISTURE STATION
- 21A7M SOIL MOISTURE STATION
- 21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE
- 21A7P PRECIPITATION STORAGE GAGE
- 21A7SP SNOW PLOW



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UPPER COLUMBIA DRAINAGE						LOWER COLUMBIA DRAINAGE						OLYMPIC PENINSULA					
NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Pend Oreille River																	
Boyer Mountain	1742	7	31N	43E	5250	Clockum Creek	20822	11	20N	20E	5300	Lewis River (continued)	21C29a	21	8N	10E	5600
Bunchgrass Meadow	1741	24	37N	44E	5000	Clockum Creek No. 2	20823	1	20N	20E	4300	Divide Meadow	21C25a	28	9N	9E	3500
Winchester Creek	1743	30	33N	43E	2970	Squitchuck Creek	2083	12	21N	19E	4400	Grand Meadow	21C25	8	9N	7E	3800
Kettle River																	
Boulder Road	1842	36	39N	36E	1450	Scout-A-Vista	2084	18	21N	20E	3400	Long Pine Shelter	21C26	24	8N	5E	3200
Butte Creek	1843	28	39N	35E	4070	Stemilt Creek	2088	34	21N	20E	4450	Marble Mountain	22C5a	24	8N	5E	3200
Cabin Creek	1848	5	38N	36E	3170	Stemilt Slide	2086	30	21N	20E	5000	New Muddy River	22C6	32	6N	6E	2000
Coat Creek	1844	26	39N	35E	3595	Upper Wheeler	2087PM	30	21N	20E	4400	Oldman Pass	21D19	22	6N	7E	3100
Snow Caps Creek	1845	3	38N	36E	2150	Crob Creek	1881m	32	27N	34E	2440	Plains of Abraham	22C1a	35	9N	5E	4400
Snow Caps Trail	1846	5	38N	36E	2720	Creston-Kunz	1883m	28	27N	31E	2750	Smith Creek Road	22C2a	29	9N	6E	2100
Summit C. S.	1847	20	39N	35E	4600	Jack Woods	1884m	21	27N	33E	2420	Spencer Meadow	21C20a	16	8N	7E	3400
Colville River																	
Baird	1746	19	36N	42E	3215	Sheffels	1885m	17	27N	32E	2378	Surprise Lakes	21C13a	14	7N	8E	4250
Chevelah	1744	11	32N	41E	4925	Sherran	1887m	24	27N	33E	2440	Table Mountain	21C13a	20	9N	8E	4200
Stranger Mountain	1745	26	31N	38E	4990	Wheatridge	1886m	24	25N	32E	2290	Timbered Peak	21D18a	36	6N	6E	3000
Togo	1840	6	29N	38E	3370	Yokimo River	21C11	26	12N	14E	3100						
Senpail River																	
Sherman Creek Pass	1841	19	36N	35E	5350	Antanum R. S.	21C11	26	12N	14E	3100						
Okonogon River																	
Clark	1948a	2	36N	23E	7000	Big Boulder Creek	21B9	35	23N	14E	3200						
Muckamuck	1949a	2	36N	24E	6750	Bumping Lake	21C8	23	16N	12E	3450						
Mutton Creek No. 1	1941	30	37N	24E	5700	Bumping Lake New	21C36	13	16N	12E	3400						
Mutton Creek No. 2	1944	19	37N	24E	6000	Clockum Pass	2089	25	20N	20E	5370						
Payayten	20428a	32	40N	18E	4300	Cooke Creek	20810	17	19N	20E	4123						
Rusty Creek	1943P	18	35N	24E	4500	Cooper Pass	21B36	33	23N	13E	3300						
Salmon Meadows	1942M	33	37N	24E	4000	Domery Flat	21B44m	15	20N	14E	2200						
Starvation Mtn.	19410a	15	35N	23E	6750	Fish Lake	21B4	34	20N	14E	3771						
Touta Coulee	1946	30	39N	25E	2845	Green Lake	21C10	3	12N	13E	6000						
Methow River																	
Billy Goat Pass	20410a	10	38N	20E	6400	Grouse Camp	20811	29	21N	19E	5385						
Dollar Watch	20429a	8	39N	20E	7000	High Creek	20812	34	20N	19E	2930						
Harts Pass	2045a	7	37N	18E	6500	Hyak	21B34	15	22N	11E	2600						
Horsehoe Basin	1945a	15	40N	23E	7000	Kachess Dam	21B38	34	21N	13E	2220						
Loup Loup	1947	36	34N	23E	4650	Kachess Peninsula	21B37	32	22N	13E	2280						
Chelon Lake Bosin																	
Cloudy Pass	20422a	12	31N	15E	6500	Lake Cle Elum	21B14M	15	20N	14E	2200						
Greenwood Flat	20425a	3	31N	16E	3540	Manashtash	20C1	24	17N	16E	3935						
Lyman Lake	20424a	8	31N	16E	5275	Morgan Creek	21B40	9	21N	14E	2320						
Park Creek Flat	20423a	18	31N	16E	5900	Morse Lake	21C17	6	16N	11E	5400						
Park Creek Ridge	20413a	18	34N	16E	2220	Namum	20813	4	20N	19E	3875						
Petersons	20412a	7	34N	16E	4600	Noble Creek	21B35	10	21N	12E	2520						
Petersons	20416a	3	34N	17E	3730	Salmon La Sac	21B39	16	22N	14E	2340						
Rainy Pass	2049	21	35N	17E	4780	Snoqualmie Pass	21B33	4	22N	11E	3020						
Safety Harbor	20430a	32	31N	20E	6300	Trail Creek	20814	20	19N	20E	3360						
War Creek Pass	20431a	34	33N	18E	6500	Tunnel Avenue	21B8	13	21N	11E	2450						
Entiat River																	
Brief	20819	34	28N	19E	1600	Walters Flat	20815	22	20N	19E	3360						
Entiat Meadows	20433a	28	31N	17E	4800	White Pass (East Side)	21C28	2	13N	11E	4500						
Entiat River Trail	20434a	2	29N	17E	3150	White Pass (Leach Lake)	21C27	1	13N	11E	4500						
Fox Camp	20436a	17	30N	18E	6510	LOWER COLUMBIA DRAINAGE											
Pope Ridge	20820	22	29N	18E	4300	Asotin Creek											
Pope Ridge Snow Pillow	20821SP	22	30N	18E	4300	Spruce Springs											
Pugh Ridge	20432a	34	30N	18E	6400	1704											
Shady Pass	20437	20	29N	19E	6200	Mill Creek											
Snow Brushy	20435a	21	30N	17E	3850	1703m											
Tommy Creek	20821a	10	28N	18E	5300	2											
Wenatchee River																	
Berne-Mill Creek	21B23	7	26N	15E	2925	Martin Springs (Helmers SM)											
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240	1702M											
Blewett Pass No. 2	2082	35	22N	17E	4270	3											
Chinavook G. S.	20816	4	25N	17E	1810	18D13											
Lake Wenatchee	2085	33	27N	17E	1970	22											
Leavenworth R. S.	20817	1	24N	17E	1127	Klickitat River											
Merritt	20818	4	26N	16E	2140	20D1											
Stevens Pass	21B1	14	26N	13E	4070	21C15											
Stevens Sand Shed	21B45	12	26N	19E	3700	21											
numbering system example																	
21A7 SNOW PILLON																	
21A7P SNOW PILLON																	
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WATER SUPPLY OUTLOOK

State of Washington
April 1, 1970

* * * * *

* The month of March, in the State of Washington and surrounding *
* territory, was a month of above-normal temperatures and below- *
* normal precipitation. As a result of this lack of input on to *
* the watersheds, forecasts of spring and summer flows have been *
* decreased. The snowpack is now lower than was reported last *
* month and the reservoirs have less water in storage. This be- *
* low-normal precipitation and above-normal temperature has also *
* affected the runoff over the State with only a few isolated *
* basins reporting above-normal runoff during the month. The *
* snow cover has a high of 42 percent above normal for the Ah- *
* tanum Creek watershed in the Yakima basin. The low for the *
* State occurred in the Cedar watershed; this being 50 percent *
* of normal. It appears that the snowpack deficit on the west *
* side improves east of the Cascade Range through the central *
* area of the State until just west of the Columbia River itself, *
* where the snowpack is at its greatest, percentagewise. Then *
* there is a general deterioration of the snowpack toward the *
* eastern boundary. The reservoirs in the State generally con- *
* tinue to have below-normal amounts of stored water as of the *
* first of April with the key irrigation reservoirs currently *
* having 54 percent of capacity in stored water while normally *
* at this time of year the amount of reservoir water is 67 per- *
* cent. Reservoir outflow has been below normal but local melt- *
* ing below these reservoirs has accounted for much of the above- *
* normal streamflow which occurred during the month. *
* * * * *

SNOW COVER

Above-normal snowpacks are now found only in the Pend Oreille drainage and the Yakima River watershed with the highest, percentagewise, at Ahtanum Ranger Station, elevation 3100 feet. The snowpack in this area is 67 percent above normal. The other snow course in this drainage, Green Lake, elevation 6000 feet, has a snowpack that is 18 percent above normal. In this southcentral portion of the Yakima watershed most of the snow courses measured have above-normal water equivalents as of April 1 but farther to the north the snowpacks are less along the Cascade Divide with some above-normal snowpacks showing up in the northeastern portion of the watershed. The Chelan Lake watershed looks similar to the Puget Sound drainage watersheds, primarily because all the snow cover with any length of record is on the Cascade Range dividing the watersheds. It is unfortunate that we do not have enough low-elevation easterly snow courses in this area with sufficient length of record to correlate the total watershed as a whole. In the snow cover picture for the State these are the only abnormalities with the rest of the State following a general trend from one watershed to the next.



RESERVOIRS

All reservoirs, power and irrigation, in the State of Washington have less than normal amounts of water in storage with the irrigation reservoirs having the lesser amounts. Grand Coulee has 90 percent of average stored water while Bumping Lake has only 51 percent. Unless our warm, dry weather turns into normal temperatures and precipitations there could be some water shortages even at these reservoir sites but with normal precipitation and temperature all reservoirs should comfortably fill with the spring runoff.

PRECIPITATION

As stated before precipitation was low during the month of March which is a continuation of the below-normal rainfall experienced throughout this winter. Only in the southeastern portion of the State have above-normal precipitations occurred. During the month of March rainfall in this area was 8 percent above normal and for the winter months the accumulation has been 15 percent above normal. These division averages, as reported by the United States Weather Bureau, had precipitation ranging from 60 percent of normal in the southwestern portion of the State to 77 percent in the Pend Oreille-Spokane area. For the winter months this rainfall ranged from 30 percent below normal for the Columbia River in Canada to a high of 8 percent below normal for the northcentral area of the State. These figures exclude that which occurred in the southeastern area.

SOIL MOISTURE

The soil moisture story is a continuation of our precipitation story with the near-normal amounts occurring in the southeastern portion of the State and the driest areas in the northcentral area. One of the key stations, Trout Creek, will not be measured for a few months until a new instrument can be procured for this area. The observer for this station was burned out of his home and the soil moisture instrument was lost. Lack of melting in the Wenatchee drainage is the reason for the below-normal amount of soil moisture. In the Yakima area these soil moisture stations have been melting out and the soil mantle in this area will start to dry-up.

STREAMFLOW

Streamflow forecasts have generally been reduced because of the lack of input in both snow and rainfall during the month of March. Exceptions to this are in the Pend Oreille drainage where above normal rainfall in the Upper Clark Fork have increased the runoff potential as much as 9 percent. Forecasts now range from a high of 10 percent above normal in the Mill Creek drainage to a low of 24 percent below normal for the Dungeness River in the Olympic Peninsula and 23 percent below for the Similkameen. Runoff during the month of March ranged from 30 percent above normal for the Klickitat River to a low of 38 percent below normal for the Okanogan and Similkameen Rivers. The near-normal flows expected in the Snake River drainage continue to improve the situation on the lower Columbia but damaging high flows are not expected.

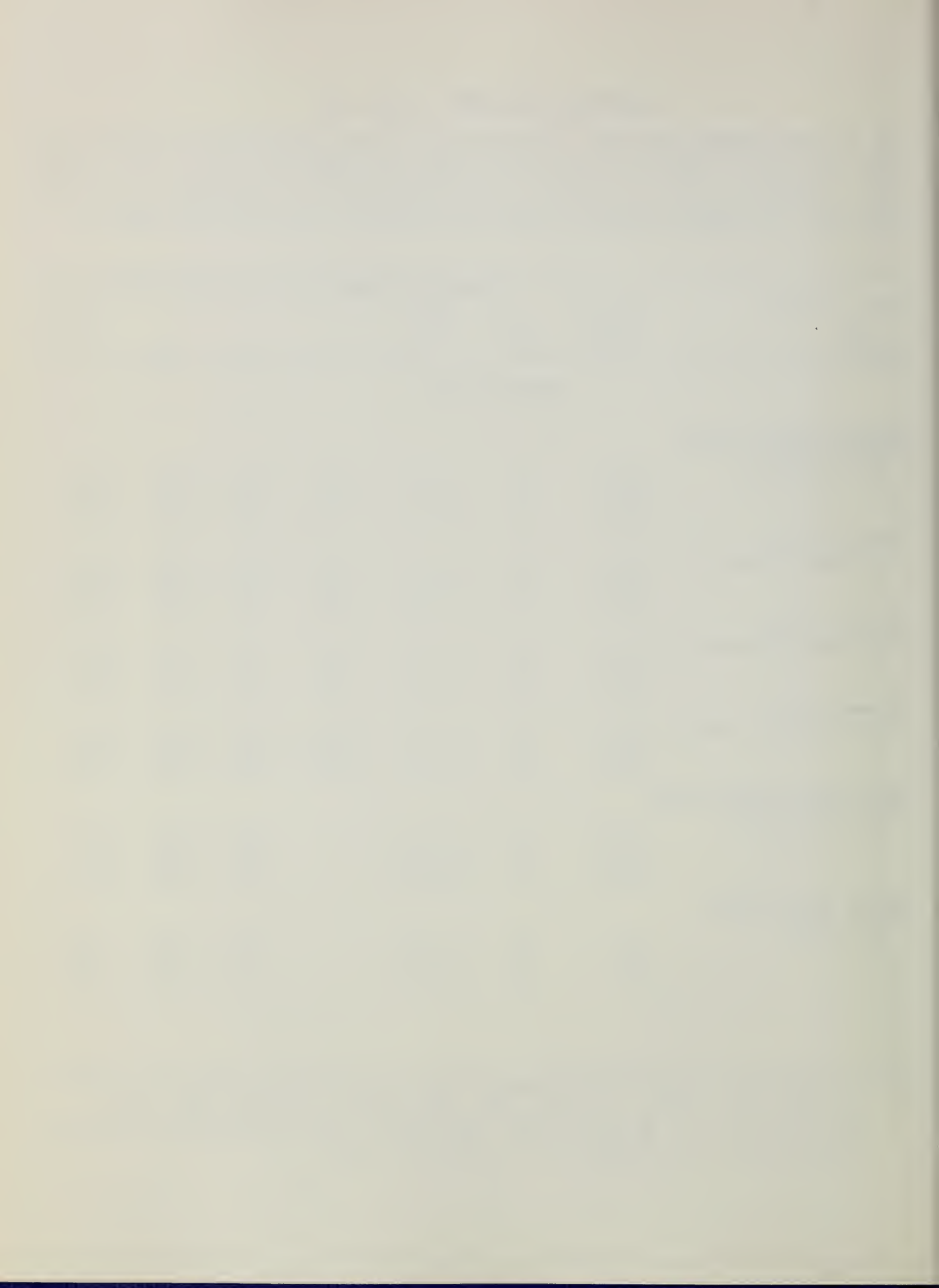


STREAMFLOW FORECASTS - APRIL 1970

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. Streamflow figures for 1969 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1970	% 15-Yr Avg.	Fore- cast Period	Seasonal Streamflow in Thousands of Acre-Feet			
				1969	1968	1967	15-yr
							Average 1953-67
<u>COLUMBIA BASIN</u>							
<u>Columbia River System</u>							
<u>Columbia River</u>							
at Birchbank <u>1/</u>	37000	80	Apr-Sep	47990	47182	52579	46368
	28500	76	Apr-Jul	40549	37092	42969	37480
	20000	74	Apr-Jun	32212	25280	30604	27040
<u>Columbia River</u>							
at Grand Coulee <u>1/</u>	57800	83	Apr-Sep	74687	63784	73739	69466
	49000	83	Apr-Jul	65696	51685	63282	58909
	36000	78	Apr-Jun	54604	38183	48697	45899
<u>Columbia River</u>							
bl Rock Island Dam <u>1/</u>	62800	82	Apr-Sep	80257	70298	82547	76241
	51500	80	Apr-Jul	71039	57403	71130	64770
	39600	78	Apr-Jun	59289	42326	54559	50387
<u>Columbia River</u>							
at The Dalles, OR <u>1/</u>	90000	86	Apr-Sep	108959	89008	109176	105176
	75000	83	Apr-Jul	96628	72494	94408	90050
	59600	82	Apr-Jun	82719	55499	74179	72410
<u>Pend Oreille River System</u>							
<u>Pend Oreille River</u>							
bl Box Canyon	14400	90	Apr-Sep		12869	16492	15991
	13100	89	Apr-Jul		11077	15587	14772
	11000	86	Apr-Jun		9471	13362	12746
<u>Kettle River System</u>							
<u>Kettle River</u>							
nr Laurier	1710	89	Apr-Sep		1851	1923	1918
	1630	90	Apr-Jul		1720	1891	1821
	1470	89	Apr-Jun		1560	1750	1644

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.



Streamflow Forecasts - April 1970 (Cont.)

Basin, Stream and Station	Forecast Runoff 1970	% 15-Yr. Avg.	Fore- cast Period	Seasonal Streamflow in Thousands of Acre-Feet			
				1969	1968	1967	15-Yr
							Average 1953-67
<u>Kettle River System (Cont.)</u>							
Colville River							
at Kettle Falls	160	105	Apr-Sep	270	63	129	153
	150	106	Apr-Jul	256	54	123	141
	135	103	Apr-Jun	240	50	116	131
<u>Spokane River System*</u>							
Spokane River							
at Post Falls ID <u>2/</u>	2500	79	Apr-Sep		1681	2811	3151
	2400	79	Apr-Jul		1577	2752	3055
	2300	79	Apr-Jun		1487	2618	2913
<u>Okanogan River System**</u>							
Similkameen River							
nr. Nighthawk	1170	77	Apr-Sep	1170	1449	1678	1525
	1100	78	Apr-Jul	1121	1359	1607	1419
	950	79	Apr-Jun	1022	1158	1396	1197
Okanogan River							
nr. Tonasket	1400	81	Apr-Sep	1448	1567	1822	1738
	1280	81	Apr-Jul	1353	1429	1740	1578
	1100	83	Apr-Jun	1231	1202	1513	1318
<u>Methow River System**</u>							
Methow River							
nr. Pateros	895	85	Apr-Sep		973	1256	1054
	835	85	Apr-Jul		906	1198	981
	705	85	Apr-Jun		767	1034	834
<u>Chelan River System</u>							
Chelan River							
at Chelan <u>3/</u>	1010	80	Apr-Sep	1331	1224	1366	1266
	910	81	Apr-Jul	1224	1068	1231	1119
	720	83	Apr-Jun	1090	798	966	870
Stehekin River							
at Stehekin	720	80	Apr-Sep		868	1004	904
	625	81	Apr-Jul		735	868	772
	480	82	Apr-Jun		535	674	586

* Forecasts made by Morlan W. Nelson and J. Alden Wilson, Soil Conservation Service, Boise, Idaho.

** These forecasts are based in part upon base flow data especially prepared and furnished for this purpose by the U. S. Geological Survey.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.



Streamflow Forecasts - April 1970 (Cont.)

				Seasonal Streamflow in Thousands of Acre-Feet			
Basin, Stream and Station	Forecast Runoff 1970	% 15-Yr Average	Fore- cast Period	1969	1968	1967	15-Yr. Avg 1953-67
<u>Wenatchee River System</u>							
Wenatchee River							
at Plain	1175	88	Apr-Sep		1163	1324	1333
	1070	89	Apr-Jul		1028	1213	1204
	875	92	Apr-Jun		812	955	952
Wenatchee River							
at Peshastin	1600	88	Apr-Sep	1953	1526	1797	1814
	1480	90	Apr-Jul	1840	1355	1662	1651
	1210	92	Apr-Jun	1669	1078	1326	1316
Stemilt Basin							
nr. Wenatchee	123	--	May-Sep			146*	--
<u>Yakima River System</u>							
Yakima River							
nr. Martin <u>4/</u>	115	80	Apr-Sep	160	97	115	145
	105	78	Apr-Jul	148	79	113	134
	95	82	Apr-Jun	140	73	102	116
Yakima River							
at Cle Elum <u>5/</u>	775	80	Apr-Sep		695	868	968
	720	81	Apr-Jul		589	801	885
	640	84	Apr-Jun		510	695	762
Yakima River							
nr. Parker <u>6/</u>	1390	80	Apr-Sep			1543	1738
	1390	81	Apr-Jul			1584	1722
	1320	83	Apr-Jun			1480	1583
Kachess River							
nr. Easton <u>7/</u>	100	79	Apr-Sep	134	76	100	128
	95	78	Apr-Jul	132	66	98	122
	90	84	Apr-Jun	125	62	90	107
Cle Elum River							
nr. Roslyn <u>8/</u>	385	79	Apr-Sep	501	358	431	485
	350	79	Apr-Jul	480	310	405	445
	310	83	Apr-Jun	444	263	347	373
Bumping River							
nr. Nile <u>9/</u>	135	90	Apr-Sep	151	105	126	150
	125	91	Apr-Jul	142	93	117	138
	107	94	Apr-Jun	133	73	103	114

* Thousands of Miners' Inches.

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.



Streamflow Forecasts - April 1970 (Cont.)

Basin, Stream and Station	Forecast Runoff 1970	% 15-Yr. Avg.	Fore- cast Period	Seasonal Streamflow in Thousands of Acre-Feet			15-Yr. Average 1953-67
				1969	1968	1967	
<u>Yakima River System (Cont.)</u>							
<u>American River</u>							
nr. Nile	115	90	Apr-Sep		98	128	129
	107	89	Apr-Jul		88	119	120
	92	93	Apr-Jun		78	100	99
<u>Tieton River</u>							
at Tieton Dam <u>10/</u>	230	92	Apr-Sep	278	166	241	251
	198	92	Apr-Jul	249	134	210	215
	160	93	Apr-Jun	224	111	169	172
<u>Naches River</u>							
nr. Naches <u>11/</u>	790	88	Apr-Sep		592	876	899
	720	88	Apr-Jul		511	810	819
	630	90	Apr-Jun		437	694	698
<u>Ahtanum Creeks</u>							
nr. Tampico <u>12/</u>	46	95	Apr-Sep		31	56	49
	42	93	Apr-Jul		27	52	45
	36	90	Apr-Jun		24	45	40
<u>Lower Columbia River System</u>							
<u>Mill Creek</u>							
nr. Walla Walla	32	110	Apr-Sep		15	23	29
	28	112	Apr-Jul		11	20	25
	25	109	Apr-Jun		10	18	23
<u>Lewis River</u>							
at Ariel <u>13/</u>	1130	83	Apr-Sep		1137	1107	1358
	980	82	Apr-Jul		862	994	1197
	880	83	Apr-Jun		782	889	1059
<u>Cowlitz River</u>							
at Castle Rock <u>14/</u>	2360	84	Apr-Sep	2722	2381	2521	2813
	2070	83	Apr-Jul	2384	1850	2258	2481
	1780	84	Apr-Jun	2178	1630	1934	2119

OLYMPIC PENINSULA

Dungeness River System

<u>Dungeness River</u>								
nr. Sequim	130	76		Apr-Sep		134	204	172
	109	77		Apr-Jul		107	169	141
	82	78		Apr-Jun		78	124	105

10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.

12/ Observed flow of North and South Forks (combined).

13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.

14/ Observed flow corrected for storage in Mayfield Reservoir.



COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1970, as per cent of the same date in 1969 and 1968 and average of record.

Tributary Basin	No. of Courses Average	Years of Record	1970 Snow Water Expressed as per cent of		
			1969	1968	1953-67
<u>UPPER COLUMBIA BASIN</u>					
Pend Oreille	12 - 17	6 - 33	79	118	102*
Kettle	10 - 13	7 - 32	63	114	82*
Colville	3 - 5	11	72	100	97*
Spokane	8 - 12	6 - 33	77	167	91*
Sanpoil	1	31	60	93	88*
Okanogan	26 - 31	5 - 35	86	93	92*
Methow	7 - 9	9 - 28	74	95	98*
Chelan	3 - 5	9 - 38	63	73	76*
Entiat	1 - 8	3 - 5	66	122	184*
Wenatchee	8 - 11	9 - 38	76	188	94*
Yakima	14 - 22	4 - 50	84	192	102*
Ahtanum	1 - 2	21	82	130	142*
<u>LOWER COLUMBIA</u>					
Mill Creek	1 - 3	5 - 20	56	900	82*
Klickitat	1	26	55	--	--
White Salmon	2	26	69	136	76*
Lewis	13 - 14	9 - 26	57	122	67*
Cowlitz	7 - 8	7 - 30	64	151	71*
<u>PUGET SOUND</u>					
Nisqually	2 - 3	5 - 20	88	174	77*
White	3	14 - 30	74	111	80*
Green	5 - 6	9 - 24	64	337	68*
Cedar	2 - 5	8 - 9	31	1236	50*
Snoqualmie	2 - 3	2 - 24	62	208	79*
Skykomish	2 - 3	12 - 24	63	197	76*
Skagit	10	19 - 38	67	87	70*
Nooksack	4 - 5	2 - 8	71	145	--
<u>OLYMPIC PENINSULA</u>					
Skokomish	4 - 5	6 - 20	55	68	68*
Elwha	1	20	46	78	51*
Dungeness	1	20	65	96	69*

* Records of less than 15 years used on computation of average

RESERVOIR STORAGE - 1000 Acre Feet

BASIN or STREAM			1970	1969	1968	Normal
		<u>COLUMBIA</u>				
Spokane	Coeur d'Alene Lake	225.1	133.8	227.5	156.5	164.0
Columbia	Franklin D. Roosevelt Lake	5232.0	2111.5	***	585.2	2359.6
Columbia	Banks Lake	761.8	698.9	693.5	682.9	499.3
Okanogan	Conconully Reservoir	13.0	8.0	5.2	7.2	6.7
Okanogan	Salmon Lake	10.5	7.4	6.3	8.9	8.5
Chelan	Lake Chelan	676.1	22.0	88.2	437.3	169.0
		<u>YAKIMA</u>				
Yakima	Keechelus Lake	157.8	76.0	102.2	146.4	102.8
Kachess	Kachess Lake	239.0	181.5	181.5	225.1	184.4
Cle Elum	Lake Cle Elum	436.9	199.5	271.3	390.2	278.8
Bumping	Bumping Lake	33.7	7.2	3.3	16.6	14.0
Tieton	Rimrock Lake	198.0	110.1	158.2	186.1	135.8
		<u>PUGET SOUND</u>				
Skagit	Ross Reservoir	1202.9	568.5	480.3	1154.5	715.2
Skagit	Diablo Reservoir	90.6	86.6	88.3	85.4	85.5
Skagit	Gorge Reservoir	9.8	8.4	8.1	7.9	--

1/ Based on Active Storage

* 15-year average 1953-67

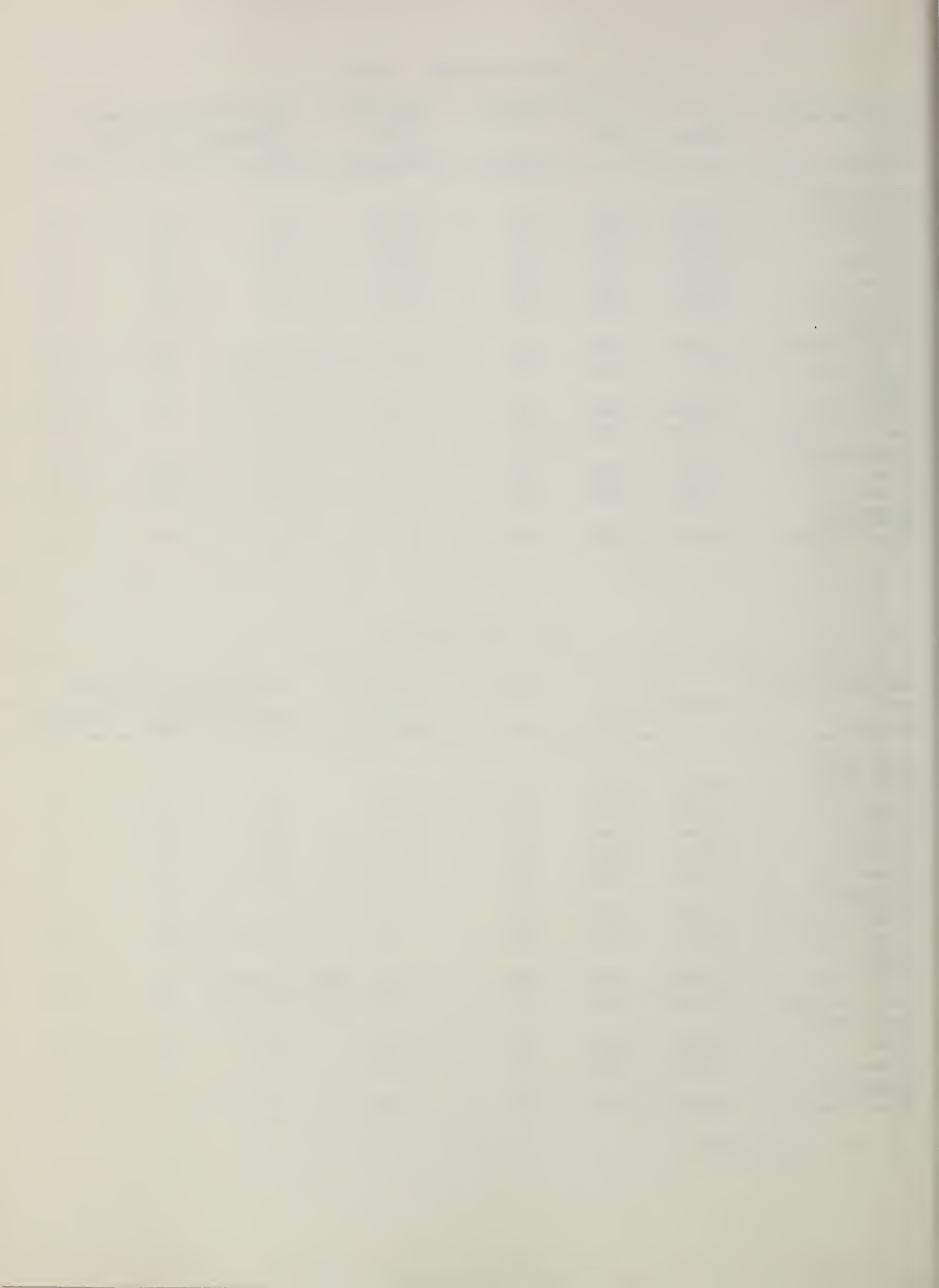
SOIL MOISTURE - April

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches):	Soil Moisture Content		
				Total : Capacity :	(Inches) as of April 1		
					1970	1969	1968
<u>CRAB CREEK</u>							
Jack Woods	18B3m	2600	48	13.6	10.4	9.8	9.4
Krause	18B4m	2440	48	13.6	9.6	8.4	8.7
Sheffels	18B5m	2360	48	13.6	8.2	7.0	6.6
Sherman	18B7m	2440	48	13.6	8.2	6.7	7.8
Wheatridge	18B6m	2200	48	13.6	9.5	9.5	9.2
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	2.4	3.2	3.6
Trout Creek	3-M	3600	48	7.3	Not Measured	6.5	4.6
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	5.6	--	4.9
Lake Cle Elum	21B14M	2200	48	12.8	9.2	--	9.0
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	10.4	10.9	6.8
Helmrs	17C2M	4400	48	12.0	11.2	11.5	11.7
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	6.9	10.7	12.0

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches) :	Soil Moisture Content		
				Total : Capacity :	(Inches) as of Oct 1		
					1969	1968	1967
<u>CRAB CREEK</u>							
Jack Woods	18B3m	2600	48	13.6	7.5	7.1	5.2
Krause	18B4m	2440	48	13.6	5.9	5.2	4.9
Sheffels	18B5m	2360	48	13.6	4.5	4.9	3.7
Sherman	18B7m	2200	48	13.6	4.2	3.9	3.6
Wheatridge	18B6m	2200	48	13.6	5.4	4.6	4.0
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	2.7	2.7	1.5
Trout Creek	3-M	3600	48	7.3	3.8*	4.1	4.0
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	Not available	3.1	4.8
Lake Cle Elum	21B14M	2200	48	12.8	Not available	5.2	9.1
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	6.1	7.4	5.4
Helmrs	17C2M	4400	48	12.0	7.1	7.6	6.7
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	9.8	5.5	5.6

* Nov 1 measurement



PRECIPITATION 1/

Division Averages and Departures

DRAINAGE DIVISIONS	FALL		WINTER	
	Sep - Oct Observed	1969 <u>2/</u> Departure	Nov 1969 Observed	Mar 1970 Departure
Columbia in Canada	4.73	+ 0.84	8.94	- 3.75
Pend Oreille - Spokane	3.81	- 0.07	16.52	- 1.73
Northeastern Washington	2.91	+ 0.66	10.07	- 1.02
Southeastern Washington	2.56	- 0.09	14.26	+ 1.85
Central Washington	3.83	- 0.61	22.65	- 4.48
North Central Washington	2.02	+ 0.61	5.86	- 0.48
Northwest Slope Cascades	12.20	+ 0.53	38.97	-13.17
Southwest Slope Cascades	9.55	+ 1.83	36.37	- 4.50

Northeastern Washington	- Lower Spokane, Colville, Sanpoil and lower Kettle drainages.
Southeastern Washington	- Touchet, Tucannon and Palouse drainages.
Central Washington	- Yakima, Wenatchee and Chelan drainages.
North Central Washington	- Methow and Okanogan drainages.
Northwest Slope Cascades	- Puget Sound drainages.
Southwest Slope Cascades	- Lower Columbia drainages.

1/ - Preliminary analysis by U. S. Weather Bureau from data furnished by Meteorological Services of Canada and U. S. Weather Bureau

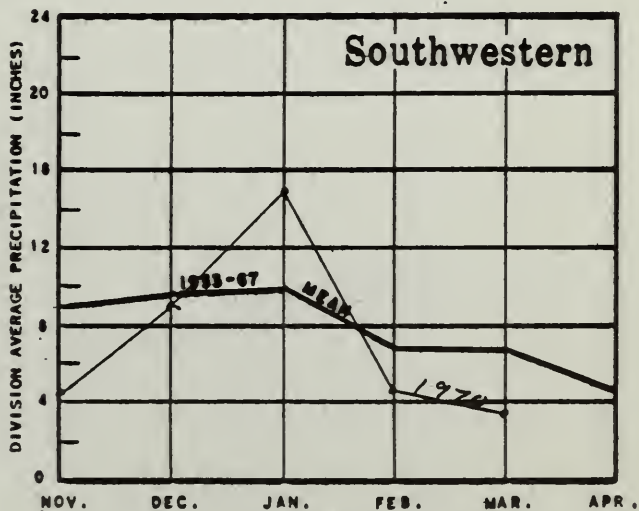
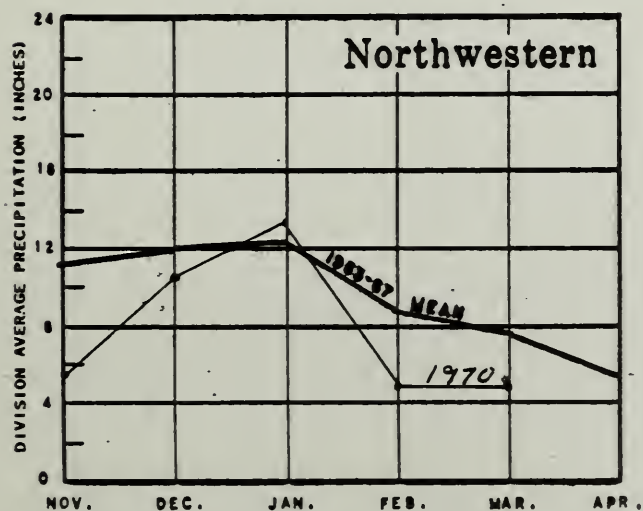
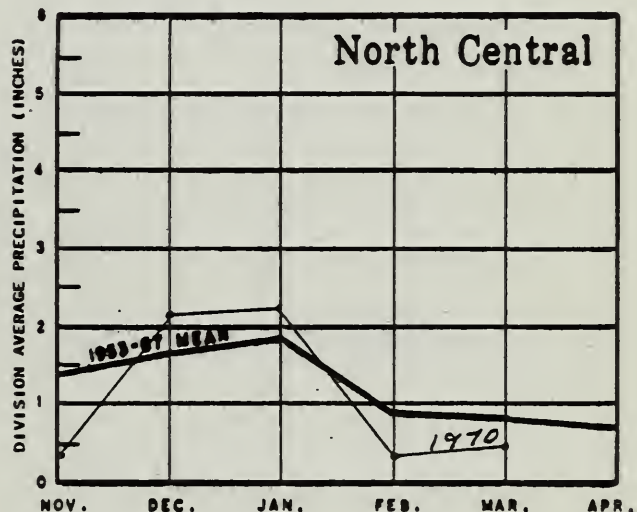
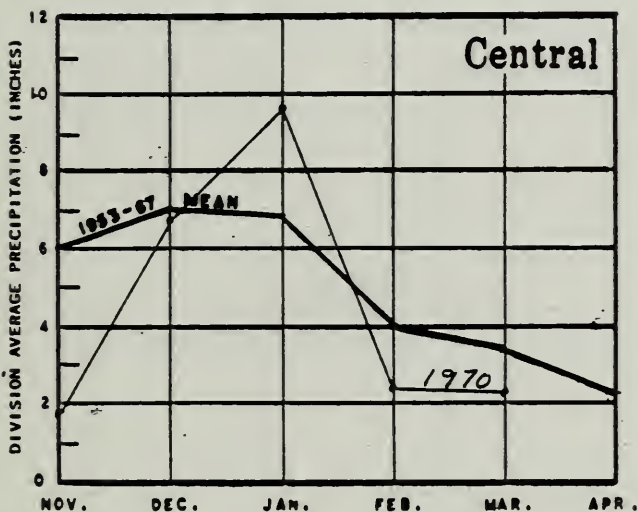
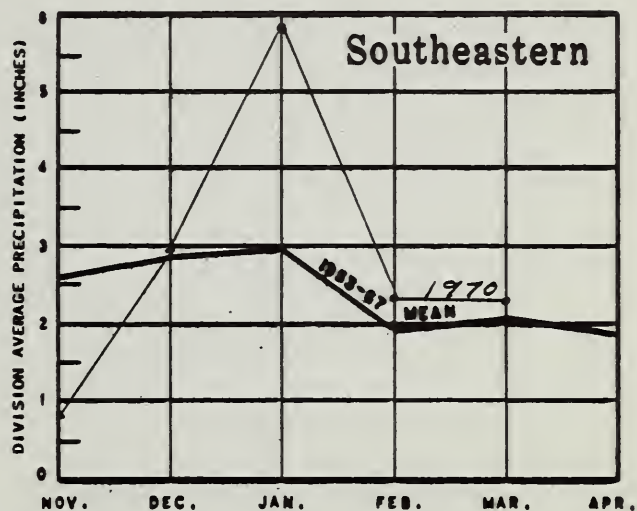
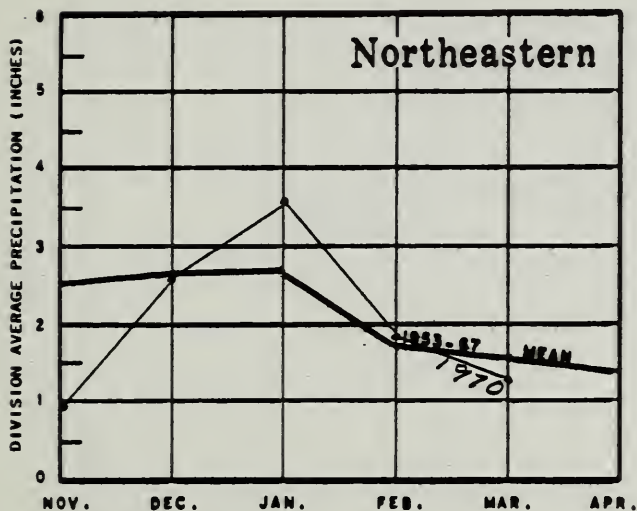
2/ - Departure from 15-year (1953-67) drainage division average.



WASHINGTON VALLEY PRECIPITATION

1969-1970

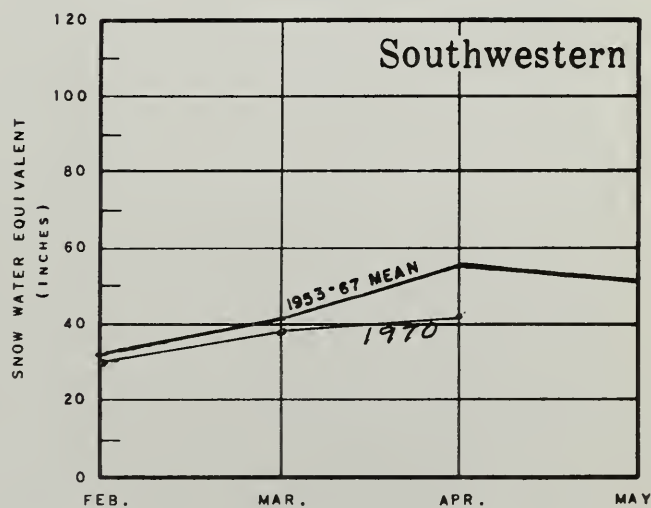
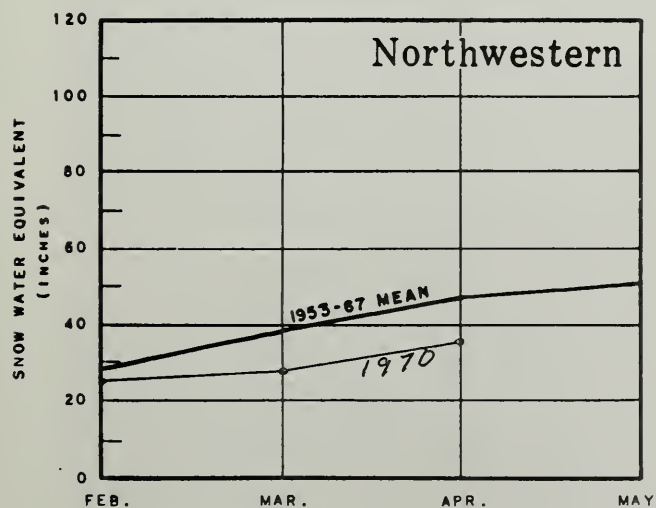
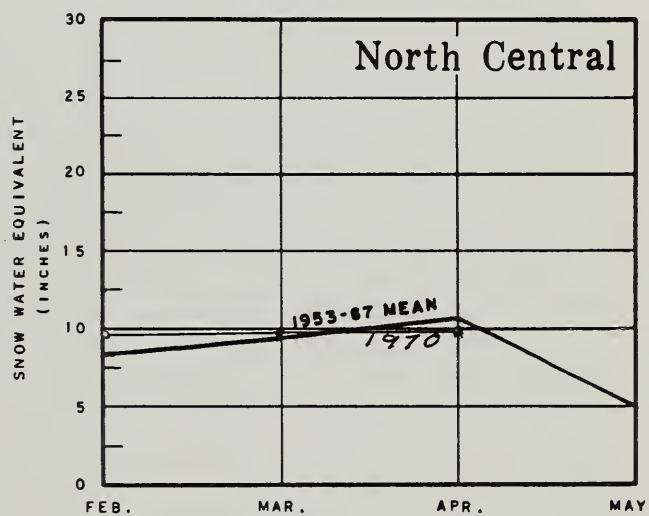
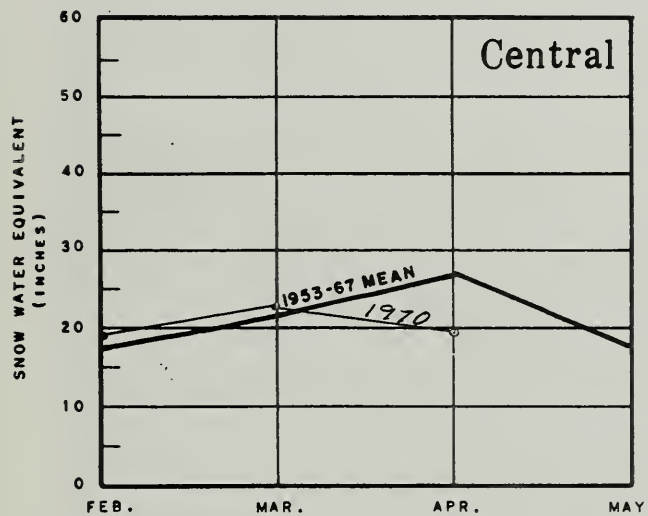
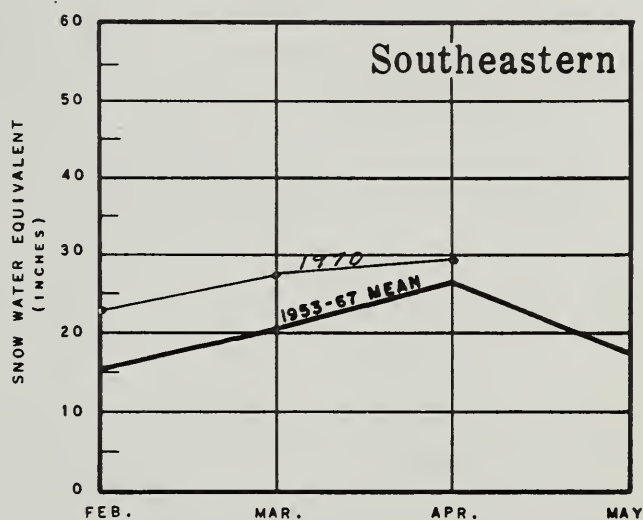
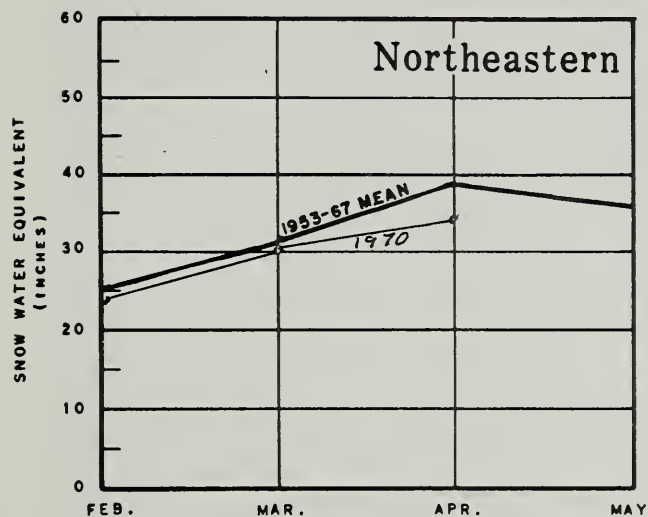
DRAINAGE AREAS



WASHINGTON SNOW COVER

1970

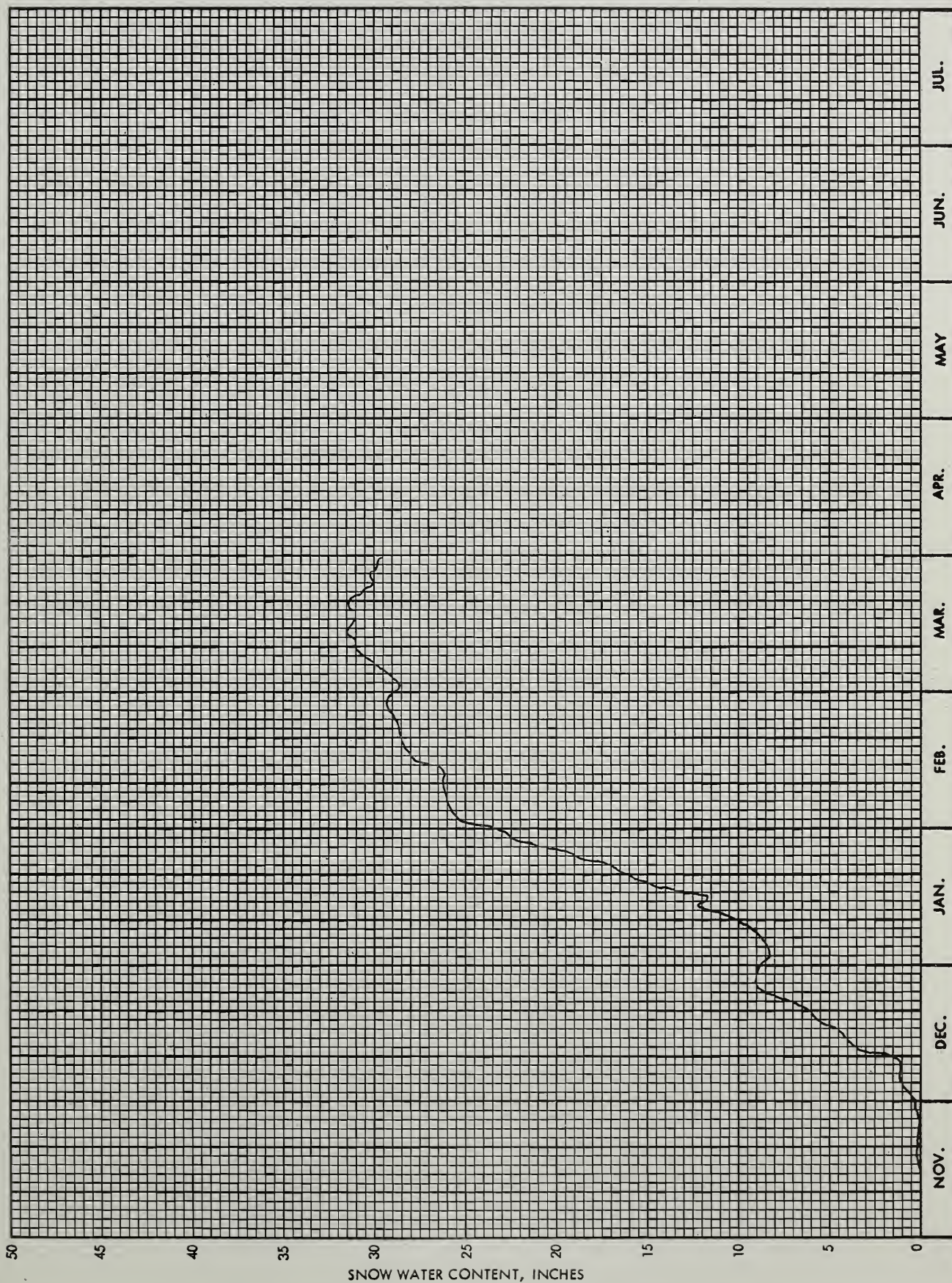
DRAINAGE AREAS



1969 - 1970
SNOW PILLOW DATA

Berne-Mill Creek

Sec. 13 T. 26N R. 14E No. 21B41SP Drainage: Wenatchee River
Lat. 47° 46' Long. 121° 01' Elev. 3170'

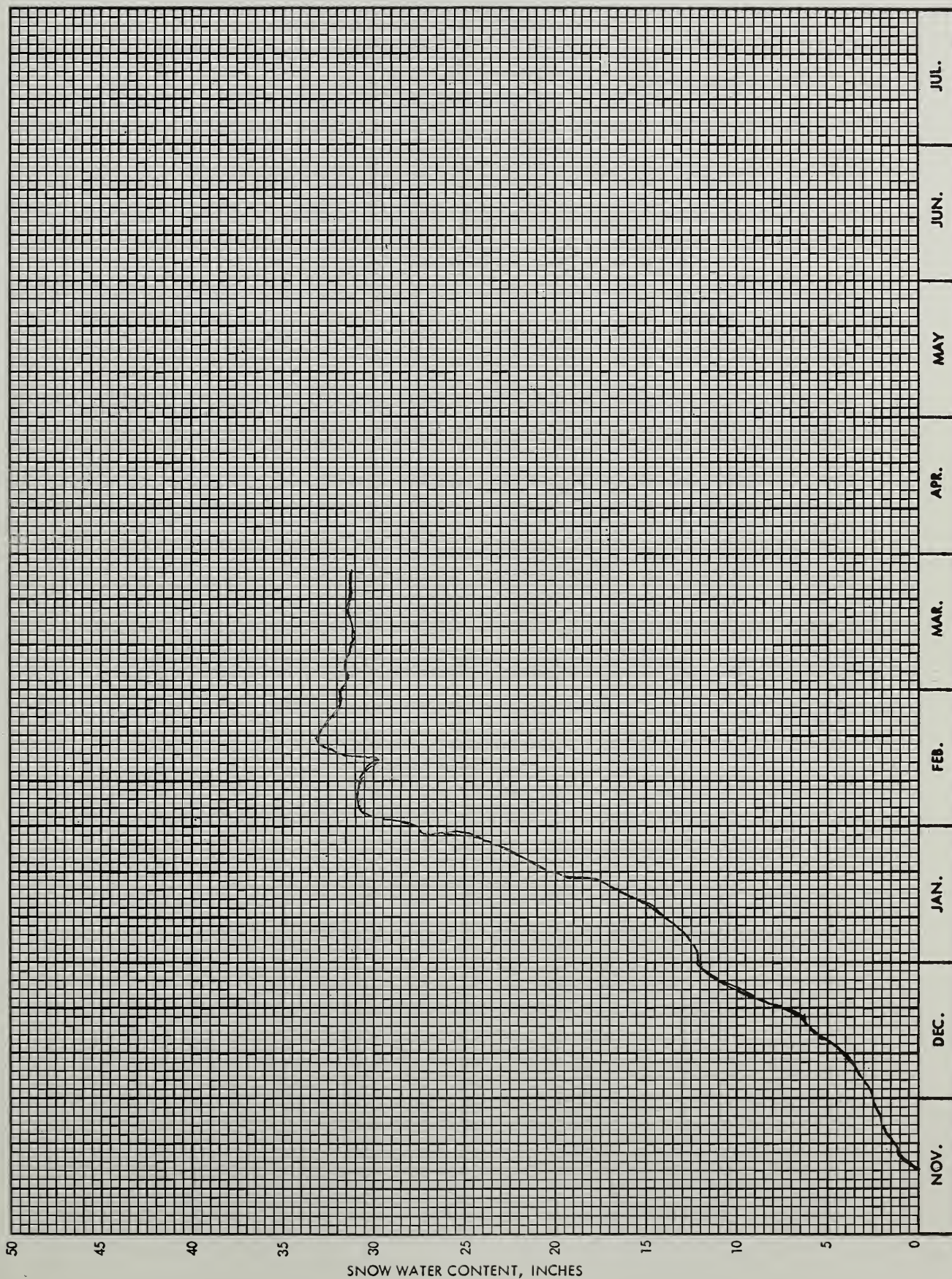




1969 - 1970
SNOW PILLOW DATA

Snowshoe Butte -FS

Sec. 28 T. 21N R. 9E No. 21B43SP Drainage: Green River
Lat. 47° 13' Long. 121° 22' Elev. 5000'



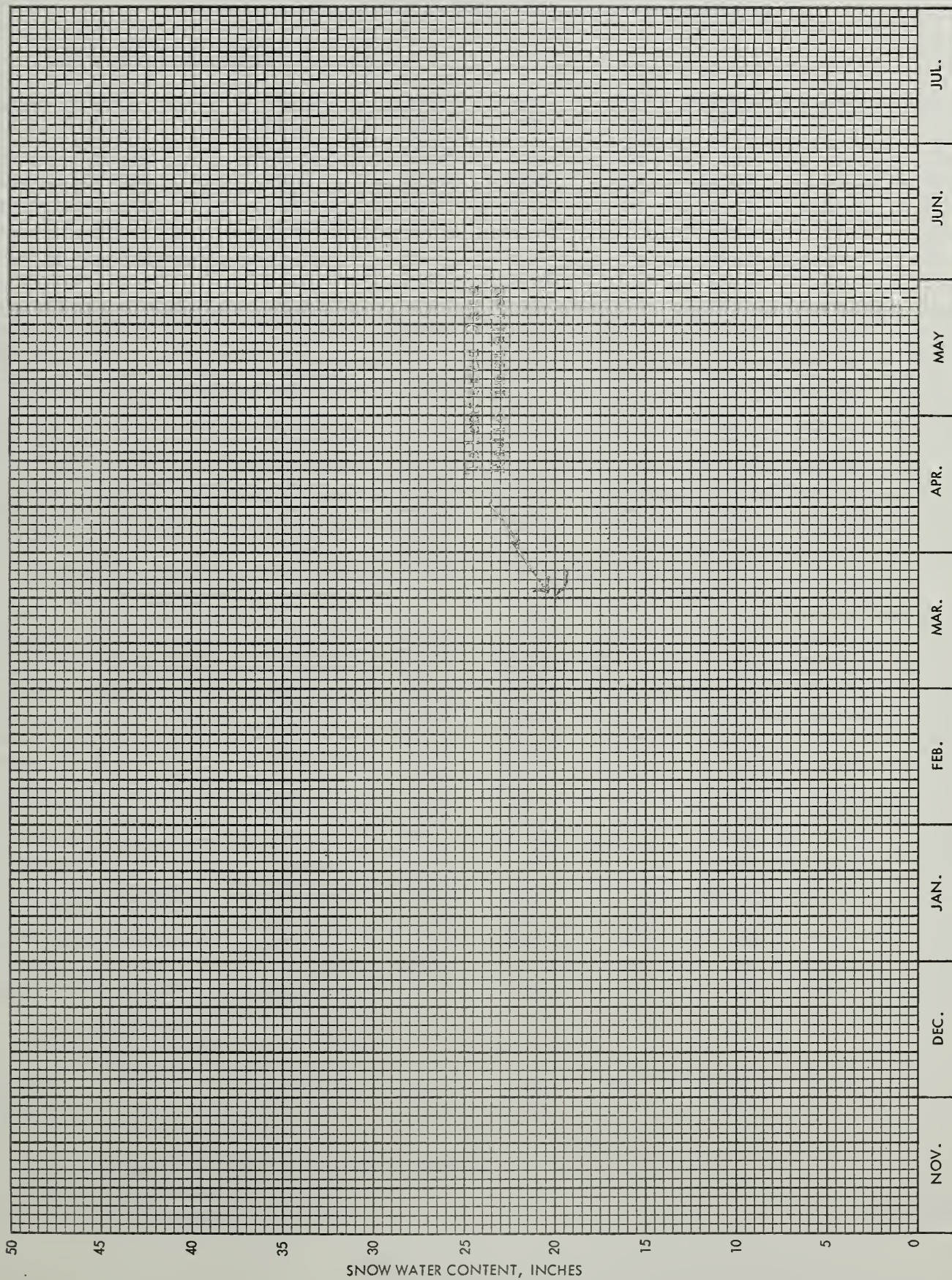


1969 - 1970

SNOW PILLOW DATA

TROUGH #2

Sec. 10 T. 20N R. 20E No. 20B258F Drainage: Colockum Creek
Lat. 47° 14' Long. 120° 19' Elev. 5310'



APPENDIX 1
SNOW DATA MARCH 1 to APRIL 1, 1970

SNOW DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average++

U P P E R C O L U M B I A D R A I N A G E

PEND OREILLE RIVER

Baree Creek	15B11	5500	4/1	111	42.1	49.5	50.5
Baree Midway	15B16	4600	4/1	94	35.5	41.2	--
Benton Meadow	16A2	2344	3/27	16	6.2	6.7	3.2
Benton Spring	16A3	4900	3/27	57	20.8	23.0	20.8
Boyer Mountain	17A2	5250	3/30	69	25.6	31.3	27.9
Brush Creek	14A4	5000	3/26	41	13.0	13.9	13.1
Bunchgrass Meadow	17A1	5000	3/30	71	25.7	36.3	31.8
#Chewelah	17A4	4925	3/28	53	16.8	22.0	19.2*
Heart Lake Trail	14C10	4800	3/27	57	20.8	25.0	23.0
Hoodo Basin	15C10	6000	3/27	122	47.8	56.1	--
Hoodo Creek	15C1	6200	3/27	117	44.1	52.4	50.6
Lookout	15B2	5250	3/31	98	34.6	44.7	38.4
Mosquito Ridge	16A4A	5100	4/3	95	37.8	44.8	40.2*
Nelson	Canada	3050	3/25	37	13.2	20.3	17.4
Schweitzer Bowl	16A6	4500	3/31	76	29.3	36.3	--
Schweitzer Ridge	16A5	6100	3/31	101	40.2	61.2	--
Smith Creek	16A1	4800	4/1	86	31.9	51.8	50.1
Winchester Creek	17A3	2970	3/30	34	11.9	16.0	11.3*
Baree Trail	15B15	3800	4/1	32	13.2	17.8	7.8

KETTLE RIVER

Barnes Creek	Canada	5500	3/26	50	14.4	19.7	21.7**
Big White Mountain	Canada	5500	3/31	51	15.5	21.2	20.1**
Boulder Road	18A2	1450	3/26	0	0.0	9.0	1.8*
Butte Creek	18A3	4070	3/26	31	9.4	14.4	9.9*
Cabin Creek	18A8	3170	3/26	25	8.7	14.3	8.9*
Carmi	Canada	4100	3/31	18	5.8	8.1	5.9**
Farron	Canada	4000	4/1	33	11.4	19.6	14.4
Goat Creek	18A4	3595	3/26	13	5.4	10.8	6.5*
Lower Trapping Cr.	Canada	3050	3/31	7	2.4	4.2	2.8**
#Monashee Pass	Canada	4500	3/26	34	8.9	12.9	14.4
Old Glory Mountain	Canada	7000	3/27	60	21.1	32.1	27.3
Snow Caps Creek	18A5	2150	3/26	0	0.0	7.8	1.9*
Snow Caps Trail	18A6	2720	3/26	12	4.6	10.5	5.7*
Summit G. S.	18A7	4600	3/26	28	7.9	13.3	9.6*
Upper Trapping Cr.	Canada	5500	3/31	28	7.4	10.1	9.0**

COLVILLE RIVER

Baird	17A6	3215	3/28	19	7.5	6.6	6.4*
Carlson	18A9	2885	3/28	8	2.4	5.6	2.7*

Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

++ 1953-67 period



2019-2020

APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average

COLVILLE RIVER (Cont.)

Chewelah	17A4	4925	3/28	53	16.8	22.0	19.2*
Stranger Mountain	17A5	4990	3/28	45	14.2	20.2	14.3*
Togo	18A10	3370	3/28	35	10.3	17.7	11.2*

SPOKANE RIVER

Above Burke	15B8	4100	4/3	75	22.8	30.8	25.0*
Above Roland	15B7	4350	4/4	96	36.5	39.0	34.8*
Below Roland	15B6	3770	4/4	49	19.9	22.3	17.0*
Copper Ridge	16B2	4800	3/30	74	27.5	32.9	31.1
Forty-nine Meadows	15B3	5000	Late Report			35.7	36.1
Fourth of July Summit	16B3	3100	3/13	29	10.0	17.6	--
			3/31	22	8.0	15.8	11.2*
Granite Peak	15B13A	6000	Late Report			49.0	51.2*
Kellogg Peak	16B5A	5560	4/3	83	29.8	39.6	33.5*
#Lookout	15B2	5250	3/31	98	34.6	44.7	38.4
Lost Lake	15B14A	6000	Late Report			62.1	66.2*
Lower Sands Creek	16B1	3400	3/30	53	20.6	23.7	21.0
Medicine Ridge	15B4A	6150	Late Report			47.8	--
#Mosquito Ridge	16A4A	5110	4/3	95	37.8	44.8	40.2*
Outlaw Creek	15B12A	3750	Late Report			23.5	17.8*
Roland Summit	15B5A	5200	Not Measured			43.9	41.2*
Sherwin	16C1	3200	3/28	32	11.4	14.8	16.6*
Sunset	15B9A	5600	4/3	100	32.6	42.9	35.6*

SANPOIL RIVER

Sherman Creek Pass	18A1	5350	3/27	41	13.3	22.2	15.2
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OKANOGAN RIVER

Aberdeen Lake	Canada	4300	3/31	16	4.7	7.2	6.1
Blackwall Mountain	Canada	6250	3/26	69	27.3	32.0	33.9**
Bouleau Creek	Canada	5000	4/1	32	10.3	12.7	11.9**
Brenda Mine	Canada	4800	3/26	36	9.6	10.9	--
Brookmere	Canada	3200	3/29	29	8.0	6.5	9.3
Carrs Landing (Lower)	Canada	2250	3/28	0	0.0	0.0	--
Carrs Landing (Upper)	Canada	3200	3/28	14	4.1	5.2	--
Clark +	19A8a	7000	Not Measured			23.0	23.1*
Copper Mountain	Canada	4300	3/30	17	5.4	4.8	5.4
Enderby	Canada	6250	3/27	97	34.6	43.9	37.7**
#Freezeout Meadows	20A2	5000	3/30	66	23.4	26.4	32.6

Not located directly on this drainage

* Adjusted 1953-67 average

** Average for years of record

APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average ++
<u>OKANOGAN RIVER (Cont.)</u>							
Hamilton Hill	Canada	4900	3/27	40	13.1	14.5	14.6**
#Harts Pass	20A5A	6500	3/31	94	36.6	45.6	46.6
#Horseshoe Basin +	19A5a	7000	2/26	43	14.6	20.5	11.6*
			3/30	47	16.4	25.2	13.5*
Isintok Lake	Canada	5510	3/28	21	5.5	5.9	7.0**
Lost Horse Mountain	Canada	6300	Late Report			7.7	7.5**
#Loup Loup	19A7	4650	3/26	26	9.5	14.7	8.7*
McCulloch	Canada	4200	3/29	22	5.8	8.2	6.5
Missezula Mountain	Canada	5100	3/26	26	7.2	7.6	7.8**
Mission Creek	Canada	6000	3/26	50	14.0	22.5	20.1
Monashee Pass	Canada	4500	3/26	34	8.9	12.9	14.4
Mount Kobau	Canada	5950	3/31	37	11.7	14.7	13.2**
Muckamuck +	19A9a	6390	Not Measured			24.6	17.5*
Mutton Creek No. 1	19A1	5700	3/27	34	13.0	17.9	14.1
Mutton Creek No. 2	19A4	6000	3/27	37	13.0	17.7	15.1
New Copper Mountain	Canada	4300	3/27	17	6.1	4.1	4.2**
New Penticton Res #2	Canada	6200	3/31	30	6.8	8.4	--
Nickel Plate Mtn	Canada	6200	4/1	30	7.1	7.5	7.8
Paysayten +	20A28a	4300	2/26	48	16.3	18.7	14.2*
			3/30	42	14.7	16.4	14.9*
Postill Lake	Canada	4500	3/31	28	7.7	8.6	8.7**
#Quartette Lake	Canada	4000	3/29	39	12.8	14.4	14.2
Rusty Creek	19A3	4000	3/26	21	7.4	10.4	7.0
Salmon Meadows	19A2	4500	3/27	30	10.0	10.1	10.6
Silver Star Mountain	Canada	6050	4/1	66	22.6	35.5	26.5**
Starvation Mountain +	19A10a	6750	Not Measured			27.1	22.7*
Summerland Reservoir	Canada	4200	3/29	27	7.5	8.4	8.7
Trout Creek	Canada	4700	3/30	24	6.4	5.6	6.9
White Rocks Mtn	Canada	6000	3/30	54	18.5	21.3	20.3**

METHOW RIVER

Billy Goat Pass +	20A10a	6409	2/26	79	26.9	37.4	25.8*
			3/30	88	30.8	40.7	34.4*
Dollar Watch +	20A29a	7000	2/26	78	26.5	28.1	23.7
			3/30	75	26.2	30.2	27.6*
Harts Pass	20A5A	6500	3/31	94	36.6	45.6	46.6
Horseshoe Basin +	19A5a	7000	2/26	43	14.6	20.5	11.6*
			3/30	47	16.4	25.2	13.5*
Loup Loup	19A7	4650	3/26	26	9.5	14.7	8.7*
#Mutton Creek No. 1	19A1	5700	3/27	34	13.0	17.9	14.1
#Mutton Creek No. 2	19A4	6000	3/27	37	13.0	17.7	15.1
#Salmon Meadows	19A2	4500	3/27	30	10.0	10.1	10.6
#Rusty Creek	19A3	4000	3/26	21	7.4	10.4	7.0

Not located directly on this drainage

+ Snow water equivalent estimated from aerial stadia observations

* Adjusted 1953-67 average

** Average for years of record

++ 1953-67 period

APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average ++

METHOW RIVER (Cont.)

#War Creek Pass +	20A31a	6500	2/26	76	25.8	42.5	--
			3/30	75	26.2	48.7	--

CHELAN LAKE BASIN

Cloudy Pass +	20A22a	6500	2/26	75	25.5	46.7	34.9*
Little Meadows +	20A24a	5275	2/26	97	33.0	53.2	37.5*
			Not Measured			--	45.9*
Lyman Lake	20A23A	5900	2/26	107	36.4	62.3	50.3*
			3/27	113	46.6	70.8	58.5
Park Creek Flat +	20A13a	2220	2/26	76	25.8	--	31.0*
			Not Measured			--	34.4*
Park Creek Ridge	20A12A	4600	2/26	94	32.0	52.1	41.7*
			3/27	94	33.7	52.2	46.5
Petersons +	20A16a	3730	2/26	74	25.2	34.2	32.5*
Rainy Pass	20A9	4780	3/31	81	31.0	42.6	41.2
Safety Harbor	20A30A	6300	2/26	48	16.3	35.3	--
			3/30	59	20.9	35.0	--
War Creek Pass +	20A31a	6500	2/26	76	25.8	42.5	--
			3/30	75	26.2	48.7	--

ENTIAT RIVER

Brief	20B19	1600	3/28	12	4.6	9.7	2.5*
Entiat Meadows +	20A33a	4800	3/31	99	36.9	47.8	--
Entiat River Trail +	20A34a	3150	3/31	44	17.0	24.5	--
Fox Camp +	20A36a	6510	3/31	114	42.5	64.3	--
Pope Ridge	20B20	4300	3/12	53	17.4	25.8	--
			3/26	42	16.3	24.6	--
Pope Ridge S. P.	20B24SP	4300	Not Measured			24.0	--
Pugh Ridge +	20A32a	6400	3/31	87	32.5	42.7	--
Shady Pass	20A37	5000	3/13	61	20.0	--	--
			3/27	56	21.0	--	--
Snow Brushy +	20A35a	3850	3/31	73	27.2	47.0	--
Tommy Creek +	20B21a	5300	3/31	56	20.9	29.6	--

WENATCHEE RIVER

Berne-Mill Creek	21B23	2925	3/15	Not Measured		38.3	--
			3/31	68	28.8	36.3	27.5*
Berne-Mill Creek New	21B41SP	3240	3/15	Not Measured			
			3/31	64	29.8	37.4	--
Blewett Pass No. 2	20B2	4270	4/1	43	19.0	21.7	16.1

+ Snow water equivalent estimated from aerial stadia observations

* Adjusted 1953-67 average

++ 1953-67 period

APPENDIX 5

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average ++
WENATCHEE RIVER (Cont.)							
Chiwaukum G. S.	20B16	1810	3/15	Not Measured		17.6	--
			3/31	28	10.4	14.4	9.6*
#Fish Lake	21B4	3371	3/27	70	31.0	43.0	35.4
Lake Wenatchee	20B5	1970	3/15	Not Measured		19.8	--
			3/31	24	9.9	17.4	11.1*
Leavenworth R. S.	20B17	1127	3/26	2	0.3	2.3	--
#Lyman Lake	20A23A	5900	3/27	113	46.6	70.8	58.5
Merritt	20B18	2140	3/15	Not Measured		25.6	--
			3/31	35	14.0	24.2	14.2*
Stevens Pass	21B1	4070	3/13	125	48.3	58.3	49.7
			3/31	108	37.0	60.9	54.1
Stevens Pass Sand Shed	21B45	3700	3/13	92	33.7	43.3	--
			3/31	79	30.7	44.4	--

SQUILCHUCK CREEK

Beehive Springs	20B3	4400	3/31	28	11.4	14.1	7.7*
Scout-A-Vista	20B4	3400	3/31	24	10.2	11.7	6.4*

STEMILT CREEK

Jump-Off	20B8	4450	3/30	29	12.0	12.8	7.3*
Stemilt Slide	20B6	5000	3/31	34	14.9	17.7	13.3*
Upper Wheeler	20B7	4400	3/31	26	12.4	15.4	8.3*

COLOCKUM CREEK

Colockum Creek	20B22	5300	3/30	46	18.7	19.0	--
Colockum Creek No. 2	20B23	4300	3/30	33	13.8	12.2	--

YAKIMA RIVER

#Ahtanum R. S.	21C11	3100	3/27	22	8.2	13.0	4.9
Big Boulder Creek	21B9	3200	3/27	49	21.4	25.3	18.7
#Blewett Pass No. 2	20B2	4270	4/1	43	19.0	21.7	16.1
Bumping Lake	21C8	3450	3/16	58	25.8	20.4	16.9*
			3/31	50	22.2	18.2	16.8
Bumping Lake New	21C36	3400	3/16	65	28.5	23.6	--
			3/31	57	27.4	22.1	--
#Cayuse Pass	21C6	5300	3/27	170	73.1	91.2	91.2
Colockum Pass	20B9	5370	3/30	52	19.7	17.8	18.6*
Cooke Creek	20B10	4123	3/30	19	7.6	0.0	5.5*
#Corral Pass	21C13	6000	3/27	91	35.2	48.5	41.7*

Not located directly on this drainage

* Adjusted 1953-67 average

++ 1953-67 per

APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average \pm

YAKIMA RIVER (Cont.)

Fish Lake	21B4	3371	3/27	70	31.0	43.0	35.4
Green Lake	21C10	6000	3/27	92	38.2	37.7	33.2*
Grouse Camp	20B11	5385	3/31	51	18.9	21.2	18.2*
High Creek	20B12	2930	3/31	0	0.0	0.0	.9*
Joe Lake	21B46a	4624	Not Measured			84.2	--
Lake Cle Elum	21B14M	2200	3/15	24	10.8	16.4	--
			3/30	2	1.2	11.6	5.7
Lemah Creek	21B47a	3327	3/26	93	40.9	49.7	--
Manashtash	20C1	3935	3/30	12	5.2	4.6	--
Morse Lake	21C17	5400	3/30	138	47.3	67.8	62.0*
Nanum	21B39	2340	3/31	32	12.4	11.4	8.0*
#Olallie Meadows	21B2	3625	3/26	84	39.1	52.2	51.3
#Satus Pass	20D1	4030	4/1	24	9.9	18.0	--
#Stampede Pass	21B10	3000	3/16	97	34.0	57.8	45.2
			4/1	96	34.6	51.2	48.8
Trail Creek	20B14	3360	3/30	0	0.0	0.0	
Tunnel Avenue	21B8	2450	3/16	54	22.0	31.0	25.2*
			3/31	45	19.3	32.2	25.9
Walters Flat	20B15	3360	3/31	15	6.4	6.6	4.9*
White Pass (E. Side)	21C28	4500	3/13	67	25.4	30.9	24.4*
			4/1	61	25.1	30.4	26.6*
White Pass (L. Lake)	21C27	4500	3/20	77	32.4	38.0	31.4*
			3/31	72	31.5	38.8	32.6*
Waptus Lake	21B49a	3024	3/26	93	40.9	New Aerial Marker	

AHTANUM CREEK

Ahtanum R. S.	21C11	3100	3/27	22	8.2	13.0	4.9*
#Green Lake	21C10	6000	3/27	92	38.2	37.7	33.2

LOWER COLUMBIA DRAINAGEASOTIN CREEK

Spruce Springs	17C4	5700	3/30	74	26.9	31.6	--
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MILL CREEK

Homestead	17C1	4030	3/27	8	3.1	17.6	7.9*
Martin Springs	17C2	4400	3/27	32	13.2	23.2	14.5*
Tollgate	18D3M	5070	3/26	70	29.7	32.1	25.9

Not located directly on this drainage

* Adjusted 1953-67 average

 \pm 1953-67 period

APPENDIX 7

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average $\frac{1}{2}$

Klickitat River

Satus Pass	20D1	4030	4/1	24	9.9	18.0	--
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White Salmon River

Cultus Creek	21C12	4000	3/27	91	38.5	55.6	49.7
#Surprise Lakes	21C13A	4250	3/27	84	41.9	60.7	54.8

Wind River

#Old Man Pass	21D19	3100	3/27	15	6.2	35.2	20.7
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Lewis River

Blue Lake +	21C22a	4800	3/27	164	78.7	89.8	84.2
Bob's Trail	21C21	2200	3/27	0	0.0	26.6	13.8*
Calamity Ridge +	22D1a	2500	3/27	0	0.0	24.4	--
Council Pass +	21C18a	4200	3/27	76	36.5	44.9	42.6*
#Cultus Creek	21C12	4000	3/27	91	38.5	55.6	49.7
Divide Meadow +	21C29a	5600	3/27	116	52.2	56.7	60.0*
Grand Meadow	21C25	3500	3/27	40	18.1	32.6	29.0*
Lone Pine Shelter	21C26	3800	3/28	69	26.6	47.4	43.2*
Marble Mountain +	22C5a	3200	3/27	14	7.7	56.3	--
#Mosquito Meadows	21C19	4100	3/28	72	29.2	47.4	47.4
New Muddy River	22C6	1400	3/27	0	0.0	23.3	--
Old Man Pass	21D19	3100	3/27	15	6.2	35.2	20.7*
Plains of Abraham +	22C1a	4400	3/27	180 ^{1/}	82.8	87.1	70.2*
Smith Creek Road	22C4	2100	3/27	6	2.6	32.4	17.2*
Spencer Meadow +	21C20a	3400	3/27	6	2.7	36.8	25.6*
Surprise Lakes	21C13A	4250	3/27	84	41.9	60.7	54.8
Table Mountain +	21C24a	4200	3/27	98	43.1	51.0	49.2*
Timbered Peak +	21D18a	3000	3/27	0	0.0	36.7	23.7*

Cowlitz River

Cayuse Pass	21C6	5300	3/27	170	73.1	91.2	91.2
Mosquito Meadows	21C19	4100	3/28	72	29.2	47.4	47.4*
Ohanapecosh	21C32	2200	3/31	6	2.4	18.6	16.4*
Packwood Lake	21C31	2870	3/27	3	1.2	19.4	13.5*
Pigtail Peak	21C33	5900	3/13	125	50.3	81.0	--
			3/31	124	51.8	68.9	72.9*
#Plains of Abraham +	22C1a	4400	3/27	180 ^{1/}	82.8	87.1	70.2
Potato Hill	21C14	4500	3/28	69	29.3	41.0	33.0*

Not located directly on this drainage

+ Snow water equivalent estimated from aerial stadia observation

* Adjusted 1953-67 average

1/ Questionable snow depth - avalanche influenced

APPENDIX 8

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average ¹⁹⁵³⁻⁶⁷

COWLITZ RIVER (Cont.)

#White Pass (E. Side)	21C28	4500	3/13	67	25.4	30.9	24.4*
			4/1	61	25.1	30.4	26.6*
#White Pass (L. Lake)	21C27	4500	3/20	77	32.4	38.0	31.4*
			3/31	72	31.5	38.8	32.6*
Willame Creek	21C30	3250	3/28	35	14.4	32.6	35.0*

PUGET SOUND DRAINAGENISQUALLY RIVER

Ghost Forest	21C4	4550	3/30	80	36.0	49.5	50.1
Longmire	21C3	2760	3/30	0	0.0	13.7	10.6
New Paradise Park	21C35	5500	3/30	147	66.2	64.6	--
Stem Glade	21C1	5050	3/30	141	61.1	71.3	74.4

WHITE RIVER

#Cayuse Pass	21C6	5300	3/27	170	73.1	91.2	91.2
Corral Pass	21C13	6000	3/27	91	35.2	48.5	41.7*
#Morse Lake	21C17	5400	3/30	138	47.3	67.8	62.0*

GREEN RIVER

Airstrip	21B24	1800	3/27	0	0.0	4.9	--
Charley Creek	21B25	1200	3/27	0	0.0	0.0	--
Cougar Mountain SP	21B42SP	3200	Not Measured			28.0	--
Grass Mtn. No. 2	21B27	2900	3/27	37	16.1	33.4	26.1*
Grass Mtn. No. 3	21B28	2100	3/27	0	0.0	11.3	--
Lester Creek	21B29	3100	3/27	48	19.5	35.0	28.7*
Lynn Lake	21B50	4000	3/27	25	10.6	--	--
Sawmill Ridge	21B29	4700	3/27	69	28.6	43.3	46.0*
Snowshoe Butte SP	21B43SP	5000	3/26	112	45.0	67.3	--
Stampede Pass	21B10	3000	3/16	97	34.0	57.8	45.2
			4/1	96	34.6	51.2	48.8
Twin Camp	21B30	4100	3/27	56	23.5	30.6	31.0*

CEDAR RIVER

City Cabin	21B3	2390	3/27	17	8.5	29.6	18.3
Mt. Gardner	21B21	3300	3/27	8	4.0	28.8	19.8*
Mt Lindsay	21B16	2500	3/27	21	8.2	29.2	17.7*
Mt. Washington	21B15	3000	3/27	0	0.0	22.6	8.9*

Not located directly on this drainage

* Adjusted 1953-67 average

++ 1953-67 period

APPENDIX 9

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average $\frac{+}{+}$

CEDAR RIVER (Cont.)

Rex River	21B17	2400	3/27	0	0.0	18.8	19.8*
S. F. Cedar	21B6	3000	3/27	20	9.3	32.5	24.8
Tinkham Creek	21B20	3400	3/27	50	22.8	40.4	23.2

SNOQUALMIE RIVER

Alpine Meadow	21B48	3500	3/30	74	33.8	64.9	--
#Lake Elizabeth	21B19	2900	3/30	85	38.6	66.8	46.9
Olallie Meadows	21B2	3625	3/26	84	39.1	52.2	51.3*
S. F. Tolt	21B18	1900	3/30	0	0.0	6.3	--

SKYKOMISH RIVER

Lake Elizabeth	21B19	2900	3/30	85	38.6	66.8	46.9
#Stevens Pass	21B1	4070	3/13	125	48.3	58.3	49.7
			3/31	108	37.0	60.9	54.1
#Stevens Pass Sand Shed	21B45	3700	3/13	92	33.7	43.3	--
			3/31	79	30.7	44.4	--

SKAGIT RIVER

Beaver Creek Trail	21A4	2200	3/31	7	3.1	22.1	13.6
Beaver Pass	21A1	3680	3/30	65	26.6	41.3	35.6
Devils Park	20A4	5900	3/31	88	34.4	43.8	46.0
Freezeout Cr. Trail	20A1	3500	3/30	31	10.7	14.2	13.4
Freezeout Meadows	20A2	5000	3/30	66	23.4	26.4	32.6
#Harts Pass	20A5A	6500	3/31	94	36.6	45.6	46.6
Klesilkwa	Canada	3700	Late Report			15.3	13.6
Lake Hozomeen	21A2	2600	3/30	18	6.5	12.5	10.4
#Lyman Lake +	20A23A	5900	3/27	113	46.6	70.8	58.5
Meadow Cabins	20A8	1900	3/31	1	0.5	9.8	7.5
New Tashme	Canada	2500	4/2	9	3.6	12.1	9.8
Quartette Lake	Canada	4000	3/29	39	12.8	14.4	14.2
#Rainy Pass	20A9	4780	3/31	81	31.0	42.6	41.2
Thunder Basin	20A7	4200	3/31	51	19.0	25.6	25.8

BAKER RIVER

Baker Pass +	21A11A	3800	3/3	126	55.4	--	--
			3/16	143	62.9	--	--
			4/2	148	62.9	--	--
Dock Butte +	21A11A	3800	3/3	103	45.3	69.3	65.3*
			3/16	96	42.2	73.1	--
			4/2	112	47.0	74.8	81.0

Not located directly on this drainage

* Adjusted 1953-67 average

+ Snow water equivalent estimated from aerial stadia observations

APPENDIX 10

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	No.	Elevation				Last Year	Average \pm

BAKER RIVER (Cont.)

Easy Pass +	21A7A	5200	3/3	110	48.4	67.2	82.1*
			3/16	132	58.1	66.4	--
			4/2	164	69.3	86.3	96.7*
Jasper Pass +	21A6A	5400	3/3	140	61.6	87.4	87.3*
			3/16	168	73.9	89.0	--
			4/2	156	63.6	91.8	103.6*
Komo Kulshan	21A17	800	4/2	0	0.0	15.8	--
Marten Lake	21A9A	3600	3/3	113	49.7	79.0	73.3*
			3/16	118	51.9	72.7	--
			4/2	131	55.8	78.0	88.2*
Mount Blum +	21A18a	5800	3/3	100	44.0	53.3	--
			3/16	117	51.5	52.1	--
			4/2	120	51.0	--	--
#Panorama New	21A26	4300	3/13	126	55.3	68.0	--
			3/28	123	55.8	75.0	--
Rocky Creek +	21A12A	2100	3/3	10	4.4	39.0	23.3*
			3/16	12	5.3	40.3	32.4*
			4/2	24	10.3	41.1	30.5*
Schreibers Meadow +	21A10A	3400	3/3	92	40.5	65.5	58.1*
			3/16	110	48.4	65.5	63.8*
			4/2	98	44.8	69.4	73.3*
S. F. Thunder Creek +	21A14A	2200	3/3	0	0.0	20.2	4.5*
			3/16	0	0.0	18.5	--
			4/2	0	0.0	10.9	5.3*
Sulphur Creek	21A13	1600	4/2	0	0.0	23.4	13.7*
Three Mile Creek	21A8A	4500	4/2	0	0.0	5.3	--
Watson Lakes +	21A8A	4500	3/3	94	41.4	65.9	61.3*
			3/16	90	39.6	64.7	69.0*
			4/2	113	46.0	73.2	78.2*

NOOKSACK RIVER

Bald Mountain +	21A19a	4400	3/31	100	45.0	61.5	--
Canyon +	21A20a	5100	3/31	112	50.4	68.5	--
Glacier Creek	21A23	3700	3/27	38	16.8	31.0	--
Panorama New	21A26	4300	3/13	126	55.3	68.0	--
			3/28	123	55.8	75.0	--
Twin Lakes +	21A21a	5200	3/31	151	68.0	83.6	--

OLYMPIC PENINSULADUNGENESS RIVER

Deer Park	23B4	5200	3/27	45	18.1	28.0	26.4*
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Not located directly on this drainage

++ 1953-67 period

* Adjusted 1953-67 average

+ Snow water equivalent estimated from aerial stadia observation

APPENDIX 11

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	No.	Elevation				Last Year	Average++

MORSE CREEK

Cox Valley	23B14	4500	3/29	80	30.6	49.6	--
Deer Park G. S.	23B13	4850	3/27	20	8.6	19.9	--

ELWHA RIVER

Hurricane	23B3	4500	3/28	41	15.0	32.8	29.3
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SKOKOMISH RIVER

Black & White	23B7	4200	3/27	65	24.8	53.2	47.9
Black & White Lakes	23B6	4700	3/27	108	50.4	70.9	67.3
Four Streams	23B10	3000	3/27	31	12.7	49.9	--
Home Sweet Home	23B5	5200	3/27	138	58.2	82.2	81.9
Sundown Pass	23B8	3900	3/27	106	48.7	83.2	66.5*

* Adjusted 1953-67 average

++ 1953-67 period

500

THE UNIVERSITY OF CHICAGO

100

100

100

100

100

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Department of Lands, Forests and Water Resources,
Water Resources Service, British Columbia

States:

Washington State Department of Water Resources
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
Weather Bureau
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Walla Walla
City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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with the Snow Survey"*